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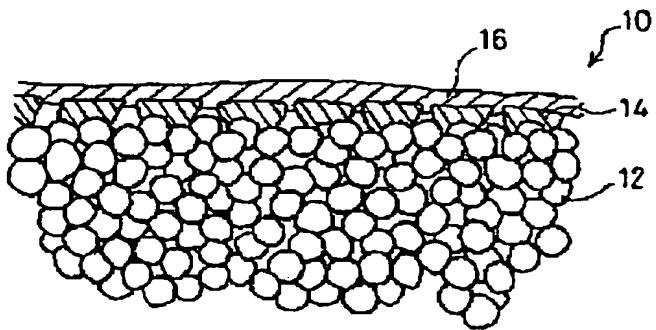
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TITLE : HYDROGEN SEPARATION  
STRUCTURE



ABSTRACT : PROBLEM TO BE SOLVED: To prevent the generation of cracks in a membrane and the peeling of the membrane even in an atmosphere of a wide temperature range by forming the first layer to be laminated on a backing with a specified material having the coefficient of thermal expansion between those of the backing and the second layer and the second layer to bury the hole in the surface of the first layer.

SOLUTION: A hydrogen separation structure 10 is equipped with a backing 12, the first layer 14, and the second layer 16 and formed by laminating these. The backing 12 is composed of porous glass and porous ceramic. The second layer 16 is made from Pd alloy or Pd alloy and formed to bury the hole in the surface of the first layer 14. The first layer 14 is made from a material in which an inorganic material is mixed with the metal powder of Ti, Cr, Mo or an alloy of Ti, Cr, or Mo, or an oxide such as  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ , and  $\text{ZrO}_2$  in the conditions of (1)-(3) as given below and formed to bury part of the hole in the surface of the backing 12. Adhesion to a material which has (1) the coefficient of thermal expansion between those of the backing 12 and the second layer 16 and (2) a property not to generate hydrogen embrittlement and (3) forms the backing 12 and the second layer 16 is maintained.

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